

# **ABSTRACT**

## **CAECAL STASIS IN RINGTAILED POSSUMS**

The paper discusses a condition seen in young Ringtailed possums, where the caecum fails to develop normally, leading to maldigestion and eventual death. It is presumed that predisposing factors, the use of antibiotic therapy and a diet high in sugar preclude the development of normal microbial activity in the caecum leading to anatomical changes and reducing the normal digestive process. Treatment methods are discussed. In the early stages a combination of high soluble fibre supplement and a drug to increase gastrointestinal motility can be useful, but in the later stages treatment has not been very successful. If antibiotics have to be used the author prefers these to be given by injection to reduce the antibiotic level in the gut. The feeding of leaves, especially gum tips, is encouraged for the development of normal gut microflora. A diet high in sugars ( fruits and flowers) during the critical stage of caecal development – juvenile to subadult - is discouraged.

## **CAECAL STASIS IN RINGTAILED POSSUMS**

**(Pseudocheirus peregrinus)**

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### **INTRODUCTION**

Ringtailed possums are primarily folivores, eating only small amounts of fruit and flowers in the wild. The high proportion of lignin and other insoluble fibre components of the diet are digested by microbial action in the large caecum, similar to koalas, greater gliders, rabbits and horses. The caecum in juvenile ringtails is a simple sac like extension of the large bowel. As the possum develops so does the caecum into a large complex sacculated organ.

Over a period of many years I have recognised a condition in ringtail possums where the caecum fails to develop normally, dilating rather than developing, leading to maldigestion and eventual death.

## **CLINICAL SIGNS**

At the stage of juvenile to subadult animals the possums develop a distended abdomen though they are thin. They initially eat well but appetite deteriorates over the course of the disease, normally 4-6 weeks. Some faecal pellets may be passed but in reduced numbers. This can, of course, be difficult to assess since ringtails are coprophagic. The abdomen is distended but not bloated with gas. This can be confirmed on Xray if necessary. The abdomen feels doughy to palpate. On ultrasound the abdomen contains a large fluid filled organ – the caecum. There is no pyrexia and respiration and gum colour are normal. Generally these animals progress from a mildly distended abdomen and good demeanour to very thin, huge distended abdomen and weak and depressed prior to death. This progression takes place over 4-6 weeks.

## **HISTORY**

The most common predisposing factors are the use of antibiotic therapy and a diet high in sugars – fruits and flowers – during the critical stage of caecal development – juvenile to subadult animals.

## **POST MORTEM**

On post mortem, the major finding is a dilated caecum filled with foul smelling contents, with almost a porridge consistency. The animal is in poor condition. Sometimes there are terminal lung changes.

## **PATHOPHYSIOLOGY**

This is presumptive as I cannot find any research done on this condition. I believe the antibiotic/abnormally high sugar diet precludes the development of normal microbial activity in the caecum and then consequently the development anatomically of the caecal taenia and sacculations. This in turn reduces the normal digestion process in the caecum, and food components in the flaccid caecum start to ferment or rot, instead of being digested. Some digested material is passed as faeces by bypassing the caecum. Eventually toxic products start to build up in the caecum and the animal becomes depressed, loses its appetite and eventually dies.

## **TREATMENT**

I have had some success with treatment in the early stages of the disorder by using a combination high soluble fibre supplement such as psyllium husks and a drug to increase gastrointestinal motility, such as metomidate or preprulsid. In the later stages of the disease unfortunately I have had poor success in saving these patients.

## **DISCUSSION**

Unfortunately young ringtailed possums are often presented having been brought in by the cat with multiple puncture wounds or with other conditions necessitating antibiotic therapy. I prefer to use antibiotics in ringtail possums by injection to reduce the antibiotic level in the gut. Juvenile ringtailed possums should always be fed leaves in the diet, especially gum tips to encourage the development of normal gut microflora. There may be a case for the use of substitute microbial products when antibiotics are prescribed but I have not had good success with products like protexin once the condition has developed.

Ringtailed possums are known to be coprophagic. This is possibly used to seed the gut with microbial organisms to aid digestion. However, coprophagia can also reduce the number of faecal pellets observed and can make it more difficult to identify the early signs of the condition.

At this stage all I can suggest is give your possum a high fibre diet for a healthy bowel!

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## **GLOSSARY**

lignin – organic substance, together with cellulose forms the chief part of woody tissue

pyrexia – fever

coprophagic – feeding on faeces

taenia – bands

sacculation – forming into small sacs

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